

# PATENT ABSTRACTS OF JAPAN

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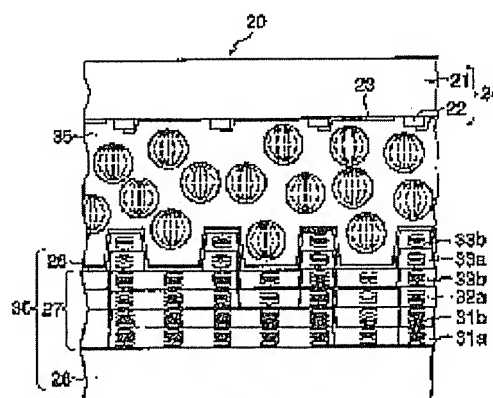
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## (54) LIQUID CRYSTAL DISPLAY DEVICE AND PRODUCTION OF COLOR FILTER SUBSTRATE

(57)Abstract:

PROBLEM TO BE SOLVED: To lessen light loss and to reduce electric power consumption by forming a cholesteric liquid crystal layer which is of the same chiral pitch and is clockwise in a chiral direction and a cholesteric liquid crystal layer which is counterclockwise as a pair and laminating plural pairs of these layers, thereby constituting a color reflection layer laminate.

SOLUTION: A color filter substrate 30 is provided with the selective reflection layer laminate 17 consisting of the cholesteric liquid crystal layers. The selective reflection layer laminate 17 is constituted by forming the layer which is of the same chiral pitch and is clockwise in the chiral direction and the layer which is counterclockwise as one pair and laminating  $\geq 2$  pairs thereof. The selective reflection layers of G and the selective reflection layers of B are formed under the color filters of R; the selective reflection layers of R and B under the color filters of G and the selective reflection layers of R and G under the color filters of B. As a result, the light of G, B is returned to the light source side in the R pixel parts, the light of B, R in the G pixel parts, the light of R, G in the B pixel parts and all of the light of R, G, B in non-pixel parts, by which the effective utilization of the light is made possible.



## LEGAL STATUS

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